Science Education

CONTENTS TO VOLUME 81, 1997

Issue 1, January

Preservice Elementary School Teacher's Conceptual Change about Projectile Motion: Refutation Text, Demonstration, Affective Factors, and Relevance
C. Hynd, D. Alvermann, and G. Qian 1

SCIENCE TEACHER EDUCATION, *Thomas Dana and Vincent Lunetta, Section Editors*

Concerns and Perceptions of Beginning Secondary Science and Mathematics Teachers
P. E. Adams and G. H. Krockover 29

Teacher Collaboration across and within Schools: Supporting Individual Change in Elementary Science Teaching
C. Briscoe and J. Peters 51

LEARNING, *James Stewart and Peter W. Hewson, Section Editors*

A Neurocognitive Perspective on Current Learning Theory and Science Instructional Strategies
O. R. Anderson 67

ISSUES AND TRENDS, *Glen S. Aikenhead, Section Editor*

Graphing: Cognitive Ability or Practice?
W.-M. Roth and M. K. McGinn 91

CULTURE AND COMPARATIVE STUDIES, *William W. Cobern, Section Editor*

Diversity and Equity for Asian American Students in Science Education
O. Lee 107

Issue 2, April

Students' Misconceptions—Looking for a Pattern
H.-J. Schmidt 123

Struggling to Promote Deeply Rooted Change: The "Filtering Effect" of Teachers' Beliefs on Understanding Transformational Views of Teaching Science
R. Yerrick, H. Parke, and J. Nugent 137

Development and Validation of an Instrument for Assessing the Learning Environment of Outdoor Science Activities
N. Orion, A. Hofstein, P. Tamir, and G. J. Giddings 161

LEARNING, *Peter W. Hewson, Section Editor*

Consensually Driven Explanation in Science Teaching
K. Meyer and E. Woodruff 173

VOLUME CONTENTS

Knowledge Restructuring in the Life Sciences: A Longitudinal Study of Conceptual Change in Biology
N. R. Pearsall, J. E. J. Skipper, and J. J. Mintzes 193

CULTURE AND COMPARATIVE STUDIES, *William W. Cobern, Section Editor*

Toward a First Nations Cross-Cultural Science and Technology Curriculum
G. S. Aikenhead 217

ISSUES AND TRENDS, *Stephen Norris, Section Editor*

Intellectual Independence for Nonscientists and Other Content-Transcendent Goals of Science Education
S. P. Norris 239

Issue 3, June

Gender- and Grade-Level Differences in Science Interest and Participation
T. A. Greenfield 259

Teachers' Beliefs and Instructional Strategies in Science: Pushing Analysis Further
B. Laplante 277

James T. Robinson's Account of Philosophy of Science and Science Teaching: Some Lessons for Today from the 1960s
M. R. Matthews 295

LEARNING, *Peter W. Hewson, Section Editor*
Readiness to Change the Conception That "Motion-Implies-Force": A Comparison of 12-Year-Old and 16-Year-Old Students
D. H. Palmer and R. B. Flanagan 317

CULTURE AND COMPARATIVE STUDIES, *William W. Cobern, Section Editor*
A Contextual Examination of School Physics in China
J. Wang 333

ISSUES AND TRENDS, *Stephen Norris, Section Editor*
Research Traditions in Comparative Context: A Philosophical Challenge to Radical Constructivism
G. J. Kelly 355

Issue 4, July

STS Interactions and the Teaching of Physics and Chemistry
J. Solbes and A. Vilches 377

A Multidimensional Framework for Interpreting Conceptual Change Events in the Classroom
L. M. Tyson, G. J. Venville, A. G. Harrison, and D. F. Treagust 387

Placing the History and Philosophy of Science on the Curriculum: A Model for the Development of Pedagogy
M. Monk and J. Osborne 405

LEARNING, *Peter W. Hewson, Section Editor*

Consistency of Students' Explanations about Combustion
J. R. Watson, T. Prieto, and J. S. Dillon 425

Conceptions of High School Students Concerning the Internal Structure of Metals and Their Electric Conduction: Structure and Evolution
J. M. De Posada 445

ISSUES AND TRENDS, *Stephen Norris, Section Editor*

Integration of Academic and Occupational Curricula in Science and Technology Education
P. J. Gaskell and G. Hepburn 469

The Central Role of Fallacious Thinking in Science Education
D. L. Zeidler 483

Issue 5, September

Demonstrations and Problem-Solving Exercises in School Science: Their Transformation within the Mexican Elementary School Classroom
A. Candela 497

Assessing Literacy in Science: Evaluation of Scientific News Briefs
C. A. Korpan, G. L. Bisanz, J. Bisanz, and J. M. Henderson 515

An Ethnographic Investigation of the Discourse Processes of School Science
G. J. Kelly and T. Crawford 533

Student Perceptions of the Social Constructivist Classroom
B. Hand, D. F. Treagust, and K. Vance 561

SCIENCE TEACHER EDUCATION, *Thomas Dana and Julie Gess-Newsome, Section Editors*

Using Participation in Public School "Family Science Night" Programs as a Component in the Preparation of Preservice Elementary Teachers
R. B. McDonald 577

COMMENTS AND CRITICISMS

Comment on "Chemistry Students' Conceptions of Solubility: A Phenomenography"
G. Rankin 597

Response to Rankin's Comments
G. L. Erikson and J. V. Ebenezer 601

THE BOOKS, *Hugh Munby, Tom Russell, and Jeffrey W. Bloom, Section Editors*

An Editorial Introduction and Invitation
H. Munby, T. Russell, and J. W. Bloom 605

The Content of Science: A Constructivist Approach to its Teaching and Learning, edited by Peter Fensham, Richard Gunstone, and Richard White
K. F. Cochran 606

VOLUME CONTENTS

The DNA Mystique: The Gene As a Cultural Icon, by Dorothy Nelkin and M. Susan Lindee
A. Kindfield 609

Genes and Human Self-Knowledge: Historical and Philosophical Reflections on Modern Genetics, edited by Robert F. Weir, Susan C. Lawrence, and Evan Fales
L. Gannett 610

Primary Science: The Challenges of the 1990s, edited by Lynn D. Newton
D. Ash 614

ScienceSense: An Introduction to Scientific Inquiry, Science Projects, and Science Fairs, by John Haysom
N. G. Lederman 616

Probelm Solving in Science and Technology, edited by M. Watts
D. Lavoie 618

Active Assessment for Active Science. A Guide for Elementary School Teachers, by G. E. Hein and S. Price
T. Russell 621

Books Received 625

Issue 6, November

Special Issue: Informal Science Education
Guest Editors: Lynn D. Dierking and Laura M. W. Martin
Special Issue Assistant Editor: Kirsten Ellenbogen

Guest Editorial: Introduction
L. D. Dierking and L. M. W. Martin 629

Sources from a Somerset Village: A Model for Informal Learning about Radiation and Radioactivity
S. Alsop and M. Watts 633

What Did You Learn Outside of School Today? Using Structured Interviews to Document Home and Community Activities Related to Science and Technology
C. A. Korpan, G. L. Bisanz, J. Bisanz, C. Boehme, and M. A. Lynch 651

Opening Doors with Informal Science: Exposure and Access for Our Underserved Students
L. S. Jones 663

Testing a Museum Exhibition Design Assumption: Effect of Explicit Labeling of Exhibit Clusters on Visitor Concept Development
J. H. Falk 679

Time-Based Behaviors at an Interactive Science Museum: Exploring the Differences between Weekday/Weekend and Family/Nonfamily Visitors
C. Sandifer 689

The Effect of Humor on Learning in a Planetarium
M. S. Fisher 703

Using Scientific Inquiry Activities in Exhibit Explanations
S. Allen 715

Seeing *Tornado*: How *Video Traces* Mediate Visitor Understandings of (Natural?) Phenomena in a Science Museum
R. Stevens and R. Hall 735

Models and Discourse: A Primary School Science Class Visit to a Museum
J. Gilbert and M. Priest 749

Moving from Task-Oriented to Learning-Oriented Strategies on School Excursions to Museums
J. Griffin and D. Symington 763

Constructing a Science Gallery for Children and Families: The Role of Research in an Innovative Design Process
L. Schauble and K. Bartlett 781

Acknowledgment of Special Reviewers 794

Volume 81 Author Index 797

Volume 81 Contents I